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HAER, UTAH, 18-RIVER, 1-

Salt Lake City Water and Electrical Power Company: Jordan Narrows Hydroelectric Plant, 1898.
W. side of Jordan River, 0.6 mi. E. of State Rt.68, 3.7 mi. S of Riverton.
Salt Lake County
Utah

Photographs and
Written and Historical Data
REDUCED COPIES OF MEASURED DRAWINGS

Historic American Engineering Record
Heritage Conservation and Recreation Service
Department of Interior
Washington, DC 20243

Historic American Engineering Record

Jordan Narrows Irrigation and Hydroelectric System

HAER UT-15

Location: Jordan Narrows, Salt Lake and Utah Counties
22 miles south of Salt Lake City

Date: 1899

Owner: Utah Power and Light Company, Salt Lake City, Utah

Condition: destroyed, but canals still in use

Significance: Site includes examples of both typical late 19th Cv. irrigation practice in Utah and an early Hydroelectric system.

Historian: Steve Rae and T. Lindsay Baker 1971

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HISTORIC AMERICAN ENGINEERING RECORD

Research on the History of Water Supply
Systems in the American Southwest

PART I. GENERAL SITE DATA

Background Information

A. Name of site: Jordan Narrows Irrigation and Hydroelectric System

B. Recorded by: Steve Rae and T. Lindsay Baker

C. Date recorded: July 30-31, 1971

D. Site location (city, county, state): Jordan Narrows, Salt Lake and Utah Counties, Utah

E. G.S.A. location code: 49-035 49-049

F. Owner (address): Utah Power & Light Co. and other unidentified parties.

Site Significance

A. Historical

This site includes examples of both typical late 19th irrigation practice in Utah and an early hydroelectric system.

B. Engineering

Canals originating at the Jordan Narrows have supplied irrigation water from the Jordan River to the valley of the Great Salt Lake since the 1870's. A hydroelectric power plant was completed at the "Narrows" in 1899 which supplied power to the mining towns of ~~Brigham~~ BINGHAM and Mercur for several years.

Due to the shortage of water flowing from Lake Utah to the Jordan River during the early 1900's, a pumping plant was constructed to lift water from Lake Utah and improve the flow of the Jordan River. Unfortunately, the pumping plant was run by the Jordan Narrows Power Plant which was located downstream. During low flow periods, if the pumping ceased at the outlet of Utah Lake, the power plant did not have the water necessary to keep running. Once shut down the power plant lacked the water supply to start up again.

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HISTORIC AMERICAN ENGINEERING RECORD

Research on the History of Water Supply Systems in the American Southwest

PART II. ENGINEER'S WORK SHEET

1. Background Information

   A. Name of site — Jordan Narrows Irrigation and Hydroelectric System

   B. Recorded by — Steve Rae

   C. Date recorded — January 1972

   D. System use — Irrigation and Power

   E. Water source — Jordan River

   F. Energy source — Gravity and Pumping

   G. Distribution method — Canals

2. Engineer's Site Description

The Jordan Narrows, located about 22 miles south of Salt Lake City, is a narrow gorge which connects the Utah Lake Valley and the Great Salt Lake Valley. The Jordan River flows north through the Narrows from Utah Lake to the Great Salt Lake. Canals originating at the Narrows have supplied irrigation water to the Great Salt Lake Valley since the 1870's.

The fall of the Jordan River is slight except for a 2.5 mile section at the Narrows where it is over 80 feet. Below this section a hydroelectric plant was completed in 1899. Water was transported to the plant by a 11,035 foot long canal with a capacity of about 600 cubic feet per second. Heads of 54 or 74 feet could be developed to power two 672 horsepower turbines. These turbines drove two 500 kw generators which produced power for mining operations and the towns of Bingham and Mercur.

As mentioned in the Engineer's Site Significance, the hydroelectric plant was dependent on the pumping plant it powered for its water supply. Once shut down the hydroelectric plant lacked the water supply to start up again during the dry years of the early 1900's. Poor management, disputes over water rights, and inadequate water supply caused the Jordan Narrows Power Plant to be a failure.

3. Present System Use and Condition

Only the foundation of the Jordan Narrows Power Plant remains. Canals originating at the Jordan Narrows are still in use for supplying irrigation water to the Salt Lake Valley.

4. Preservation Recommendations

A pumping station is still in operation at the site of the first pumping plant at the outlet of Lake Utah. Further study at this site would be valuable.

5. Site Dimensions (map or sketch)

U.S.G.S. Jordan Narrows Quadrangle
Utah
7.5 minute series
1951

U.S.G.S. Saratoga Springs Quadrangle
Utah - Utah Co.
7.5 minute series
1951

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HISTORIC AMERICAN ENGINEERING RECORD

Research on the History of Water Supply
Systems in the American Southwest

PART III. HISTORIAN'S WORK SHEET

1. Background Information

A. Name of site Jordan Narrows Irrigation and Hydroelectric System

B. Recorded by T. Lindsay Baker

C. Date recorded October 12, 1971

D. Dates of construction 1897-1903

E. Engineer(s) Frank C. Kelsey, engineer for pumping plant
R. M. Jones, engineer for hydroelectric plant

F. Owner(s) Utah Power & Light Company and unidentified others.

G. Alterations and additions

There are only the foundation remains of the Jordan Narrows hydroelectric plant. There has been so much alteration at the pumping plant at Utah Lake that parts of the original system are unrecognizable. The diversion on Jordan River is basically the same as in 1913 photographs.

2. Historian's Site Description

The Jordan Narrows irrigation and hydroelectric system is located on the Jordan River about 22 to 27 miles south of Salt Lake City. The Jordan River is the only outlet to Utah Lake. It flows north from Utah Lake, through the Jordan Narrows, into the Salt Lake Basin.

The system consists of a diversion on the Jordan River, a canal system which supplied water to the Jordan Narrows hydroelectric plant, a system of pumps at the outlet of Utah Lake to pump water ~~to~~ into the river during low levels, and the hydroelectric plant itself.

There are only limited remains of the system, essentially the diversion on Jordan River (intact as it was in 1913 photographs), the foundations of the hydroelectric plant, and the greatly altered pumping plant at the outlet of Utah Lake.

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Historian's Work Sheet (Continued)

3. Historical Events and Persons Associated with Site

4. Historical Sketch

Irrigation canals were taken from the Jordan River at least as early as the early 1870's. The water passing down the river was limited by the level of water in Utah Lake. In the early 1900's due to heavy irrigation directly from Utah Lake, the level in the lake greatly decreased, almost stopping any flow in the Jordan River. After three years of deficient water supply, the three canal companies taking water from the Jordan River decided to take action. These companies, the Utah & Salt Lake Canal Co., the East Jordan Irrigation Co., and the South Jordan Irrigation Co., in 1902, built a pumping plant at the outlet of Utah Lake in order to pump water up the river to the diversion dam and to their canals.

In the meantime, in 1894, the Salt Lake City Water & Electric Power Co. was organized to exploit the potential water power of the Jordan River to generate electric power. In 1896 they began construction of a hydroelectric plant in the Jordan Narrows that when completed in 1899 was able to use water from the canal of the Utah & Salt Lake Canal Co. to operate its generators. This plant transmitted its power to the mining towns of Bingham and Mercur, Utah.

When the canal companies built their pumping plant at the outlet of Utah Lake (in order to provide water for their canals) they used electricity generated by the Jordan Narrows Electric Plant to power the pumps. This created the awkward situation of each part of the system, the pumps and the generation station, depending on each other for their operation. This situation existed in 1902-1903. It is not known how much longer it existed.

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Historian's Work Sheet (Continued)

3. Historical Events and Persons Associated with Site

4. Historical Sketch (Continued)

The canals in existence in 1903 are all in operation at the present time.

The Salt Lake Water & Electric Power Company faced economic problems for all of its history. By 1900 it faced bankruptcy and had a receiver appointed. In 1907 it was sold to the Telluride Power Company. In 1913 it was purchased by the Utah Power & Light Co., the present owners. It is not known when the Jordan Narrows hydroelectric plant stopped operation, but it is known that in 1924 it was no longer in operation.

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Grant Pendleton
Public Relations Department
Utah Power & Light Company
1407 West North Temple Street
Salt Lake City, Utah

(Interview with T. Lindsay Baker, July 30, 1971)

1. Mr. Pendleton gave the research team some information on both the Jordan Narrows and the Ames Power Plants and agreed to send some duplicates of old pictures of the plants.

2. For further information on the Ames Plant write to this man who is writing a book on the subject:

   Orville J. Sweeting
   Quinnipiac College
   Hamden, Conn. 06518

   In writing give him the regards of Mr. Pendleton.

3. There are some remains of the Jordan Narrows Power Plant, but Mr. Pendleton was unable to find out what or how much.

4. The Jordan Narrows Plant was abandoned primarily because of the fact that the river was so flat that there was never much power ever really generated there.

5. The site of the Jordan Narrows Power Plant was somewhere between the Utah State prison and Camp Williams (National Guard).

   The "Narrows" is the gap between Utah Valley and the Great Salt Lake Valley.

6. Go to see Mr. Charles Olikan in the Central Files of the Utah Power & Light Co.

7. Mr. Pendleton would like a copy of the final report of the project.

General Site Data (continued)

3. References

Fortier, Samuel. "Water for Irrigation." In Utah Agricultural Experiment Station Bulletin No. 26. Logan: Utah Agricultural Experiment Station, 1893. (Available at Texas Tech Library, Lubbock, Texas.)

Hardesty, W. P. "The Utilization of Utah Lake as a Reservoir." Engineering News, XLIX, No. 21 (May 21, 1903), pp. 442-445. (Available at Texas Tech Library, Lubbock, Texas.)

Hardesty, W. P. "A Water Power Plant on the Jordan River, Utah." Engineering News, XXXIX, No. 17 (April 28, 1898), p. 270. (Available at Texas Tech Library, Lubbock, Texas.)

"The Generating and Transmission System of the Telluride Power Company." The Electrical World, LVIII, No. 24 (December 9, 1911), pp. 1425-1428. (Available at Texas Tech Library, Lubbock, Texas.)

U.S. Department of the Interior. Geological Survey. Water-Supply Paper No. 517. (Water Powers of the Great Salt Lake Basin by Ralf R. Wooley.) Washington, D.C.: Government Printing Office, 1924, pp. 95-96. (Available at Texas Tech Library, Lubbock, Texas.)

Utah Power & Light Company. History of Origin and Development. Prepared in Connection with Federal Power Commission Request Order Dated May 11, 1937. Salt Lake City: mimeographed, n. d. (Available at Central Files, Utah Power & Light Company, Salt Lake City, Utah.)

4. Interviews (name, position, address, date)

Grant Pendleton
Public Relations Director
Utah Power and Light Co.
1407 West North Temple
Salt Lake City, Utah
(Interview: July 30, 1971)